

# Proposed Dust Monitoring System at El Paso Community College in collaboration with NASA's GLOBE Observer Dust Monitoring Project



# Purple Air Project Objectives

## **Provide aerosol/dust data for research and educational purposes:**

Improve student engagement in STEAM courses at EPCC by providing data usable for physical science courses

Fortify collaboration with NASA's GLOBE Program and develop future collaborations with national and international institutions studying environmental art, physical sciences and atmospheric science.

Provide air quality data for use in public health mitigation planning and policy.

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# Purple Air Project

Promoting STEAM engagement with students and the community

Interdisciplinary Projects

## Purple Air Air quality Project:



Measuring regional aerosol concentrations

Collaboration with UTEP  
Department of  
Earth, Environmental and  
Resource Sciences, George  
Mason University and NASA  
GLOBE Observer program

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Purple Air FAQ:

<https://www2.purpleair.com/community/faq>

Sensor Map:

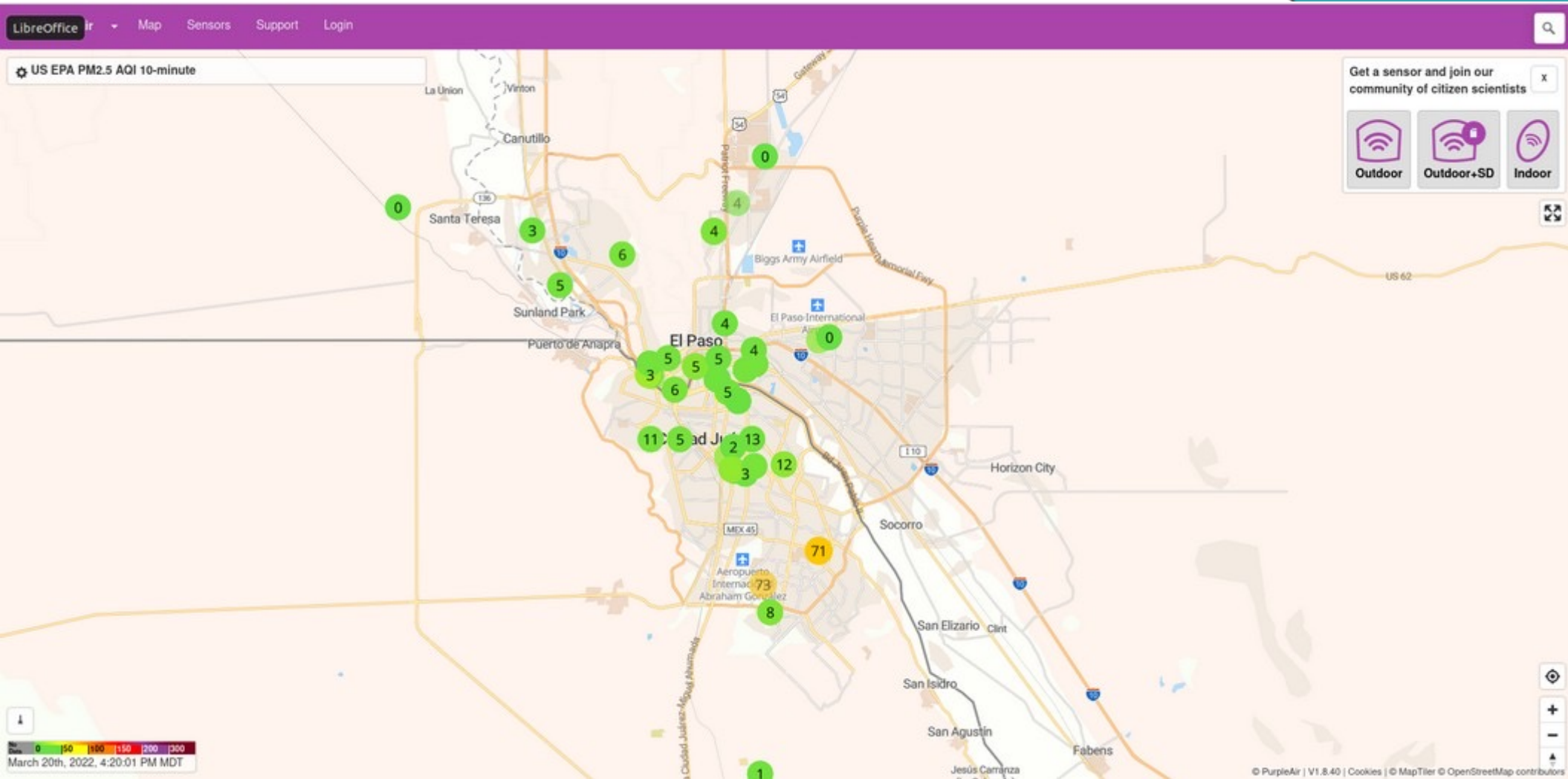
<https://www.purpleair.com/map?opt=1/mAQI/a10/cC0#2.33/37.14/-100.99>

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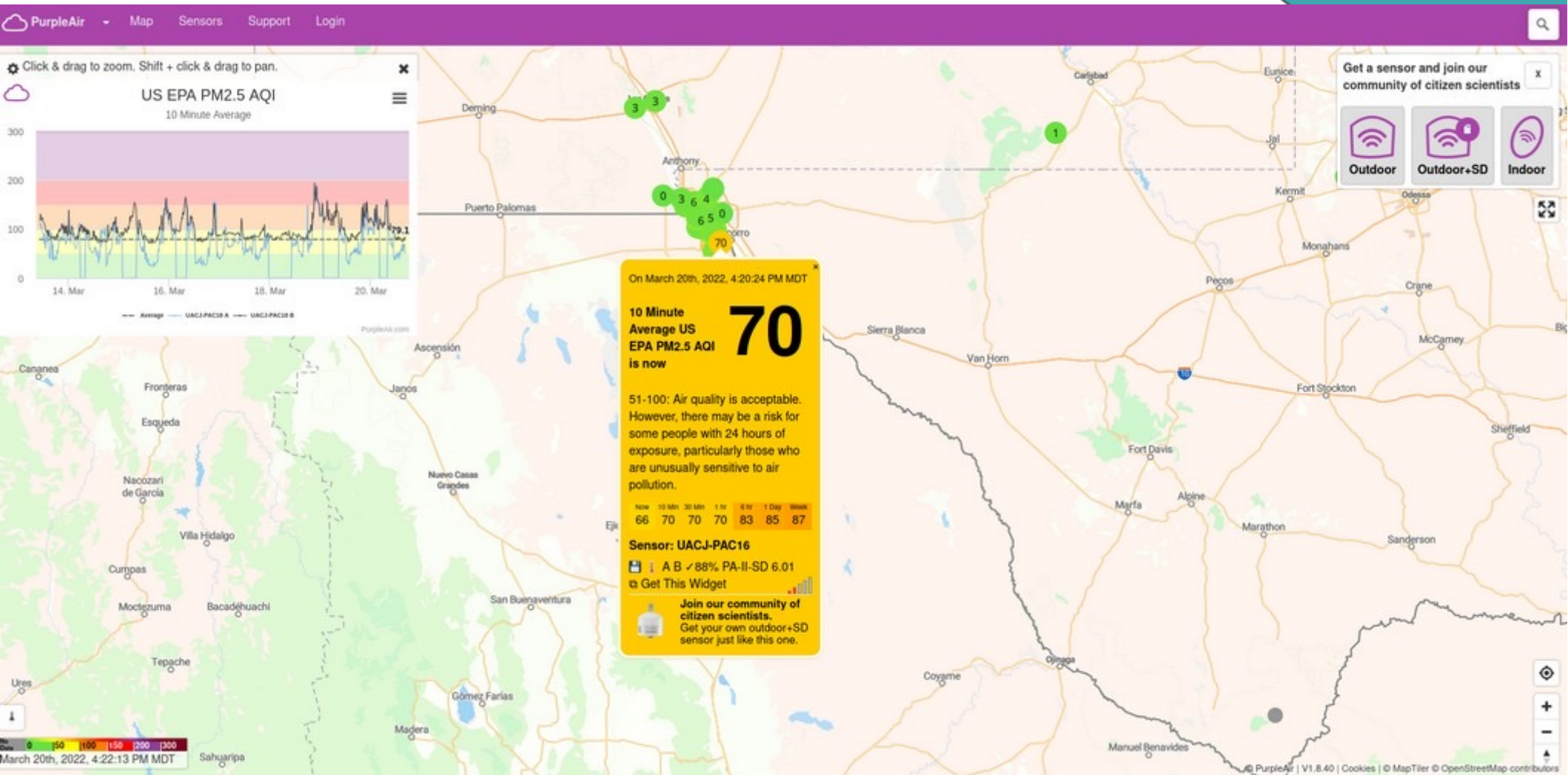
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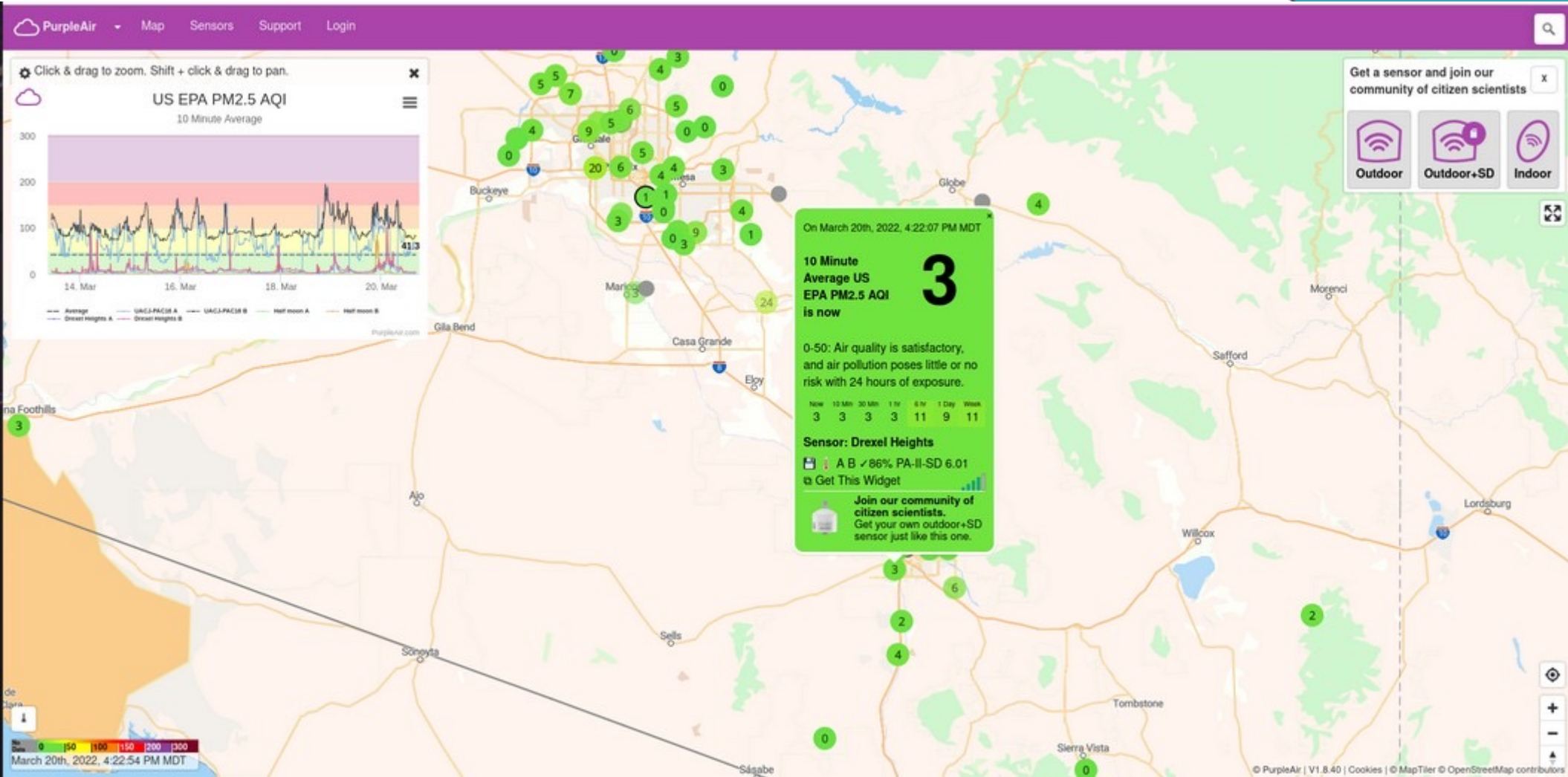


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# Purple Air Project

## Grants Opportunities



EPCC internal faculty grant (submitted Fall 2021; under review)



Youth  
Learning  
As  
Citizen  
Environmental  
Scientists



National Science Foundation  
WHERE DISCOVERIES BEGIN

Consortium for Undergraduate Research  
Experience (CURE)

Applying Spring 2022

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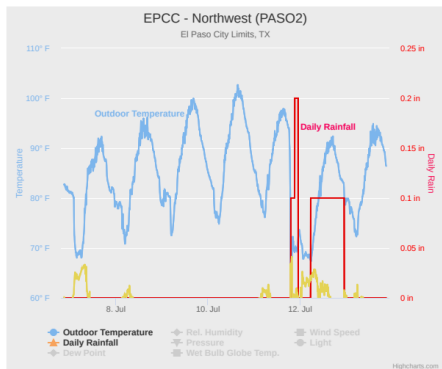
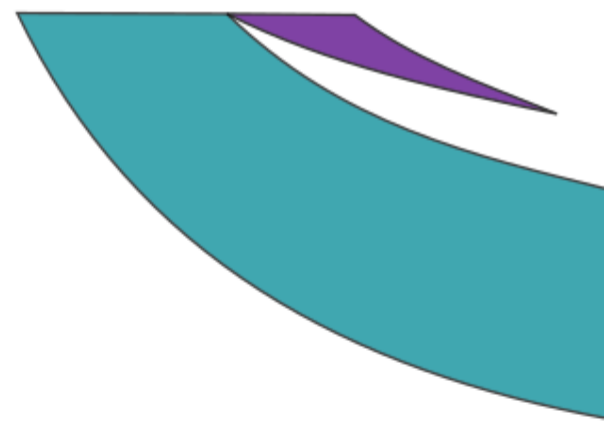




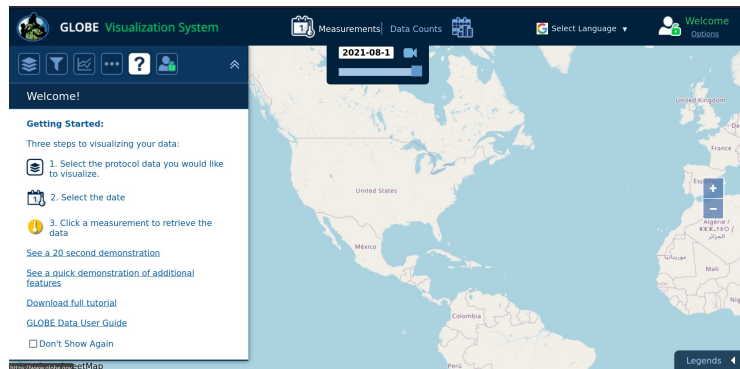
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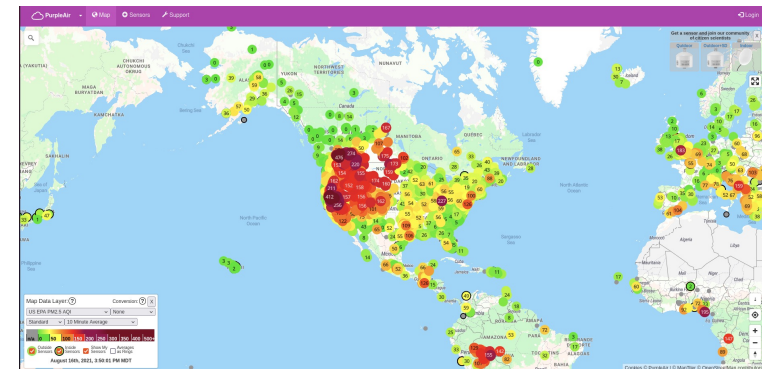
Interdisciplinary Projects



**Weather Station Data**



**NASA GLOBE Data**



**Dust/Aerosol Data**

**Applications:** Geophysics, Atmospheric Sciences, Planetary Astronomy, Physical Chemistry, Environmental Science

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# Purple Air and Art Project

Promoting STEAM engagement with students and the community

## Interdisciplinary Collaborations

*“Art and Science combined to communicate the importance of our environment – interactive and engaging.”*



[www.climatenow.fi](http://www.climatenow.fi)



Institute for Atmospheric and Earth System Research

<http://www.atm.helsinki.fi/SMEAR/index.php/smear-ii>

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# EPCC DoD STEM Consortium Physics/Geophysics CUREs

Promoting STEAM engagement with students and the community

## Interdisciplinary Collaborations

EPCC students for Physics and Astronomy classes will participate in Project Base Learning activities focused on air quality analysis by collaborating with UTEP and NMSU research labs.

Students will gain the basic knowledge and skills to use ArcGIS and/or QGIS to perform the following tasks:

- Perform basic mapping techniques using GIS
- Utilize basic geospatial statistical tools and their applications (GLOBE)
- Incorporate satellite and weather station data in maps to study surface processes and structures
- Utilize band combination techniques with satellite data to study surface processes (Drones)

Students will apply these skills toward one of two topics offered in the course:

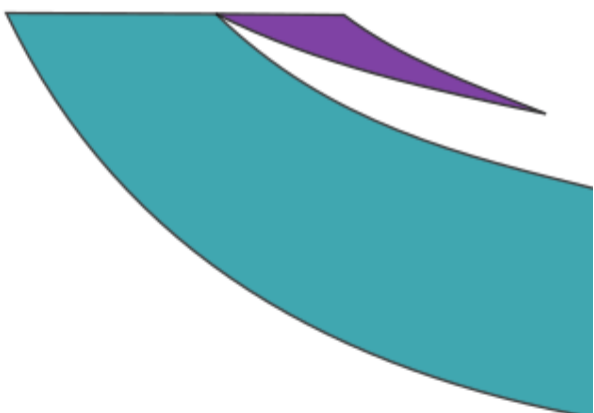
- Determine the impacts of urbanization on local environments regarding water use and LULC
- Determine the impacts of mitigation efforts on dust storms in the southwest of the United States toward public health and safety

Simultaneously students will be developing more employable skills while learning the different technologies and applications as an introduction for future certifications.

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# Thank you Questions/Comments

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